Durham-Orange Light Rail Transit Project
Draft Environmental Impact Statement Glossary

Acquisitions and Displacements

The proposed D-O LRT Project would require new right-of-way and parcel acquisitions. In order to summarize the properties to be acquired for the Light Rail Alternatives, potentially affected properties are assessed to determine if the alternative would use the entire parcel or only a portion of the parcel. This information helps to identify and disclose potentially affected properties and notify owners. Properties cannot be acquired until after the EIS is published and circulated for public review and only after a Record of Decision is issued by the Federal Transit Administration (FTA). Triangle Transit would be required to follow all applicable federal and state laws regarding acquisitions, displacements, and relocations.

Full acquisition – The acquisition of an entire parcel of land, which would thus displace the entire current use of the land. Parcels that are needed in their entirety for the project would be subject to acquired in full, as would parcels that may not be fully needed, but would be affected to such an extent that the current uses would be substantially impaired. (e.g. a parcel is acquired for a park and ride)

Partial acquisition -- The acquisition of a portion of a parcel of land, with the remaining portion being untouched. The acquisition would not prevent the continued use of the property. (e.g. a portion of a parcel is acquired for a lane widening, but access is maintained and the use of the property is not prevented).

Hazardous, Contaminated & Regulated Materials

The presence of potentially contaminated properties in the area of the proposed Light Rail Alternatives [including alignment, stations, park and rides, and Rail Operations and Maintenance Facilities (ROMFs)]. This information is used to identify potential liabilities, mitigation needs, cleanup costs, impacts to public health, and safety concerns that would be associated with construction personnel encountering unsuspected wastes or contaminated soil or groundwater. During the environmental analysis, sites were designated as having a low, medium or high risk for potential soil and/or groundwater contamination.

High Risk Sites — Properties that are within 500 feet of a Light Rail Alternative and are closed leaking underground storage tank **(LUST)** sites with no documented cleanup; are active **LUST** sites, historic dry cleaners, or auto stations (i.e., gas stations); or have open spill incidents.

Medium Risk Sites — Properties that are within 500 feet of a Light Rail Alternative and are closed **LUST** sites, aboveground storage tank/underground storage tank **(AST/UST)** sites, vehicle repair sites, or junk yards or have closed spill incidents.

Low Risk Sites — Properties that are greater than 500 feet away from the Light Rail Alternatives.

Socioeconomic & Demographic Conditions

In order to assess the potential impacts (both positive and negative) of the proposed D-O LRT Project on federally protected populations or special populations of concern, socioeconomic and demographic conditions are reviewed. The definitions used here track the definitions used by the U.S. Census Bureau in the decennial Census and the annual American Community Survey. This information helps to identify federally protected populations, potential impacts (positive and negative), and to target public outreach for the proposed D-O LRT Project.

Minority Population – Percentage of persons who classify themselves as minorities. "Minorities, as defined by the US Census Bureau, are composed of several different race categories—Black, American Indian, Asian, Pacific Islander, Other, and Two or More races. Hispanics are also considered a minority, though Hispanic, or Latino, is defined by the US Census Bureau as an ethnicity rather than a race."

Below Poverty – Percentage of persons who live in households that make at or below the U.S. federal level (in 2015, $11,770 for a one-person household, $28,410 for a five-person household).

Zero-vehicle Households — Percentage of households that do not have a vehicle kept at home that's available for the personal use of household members.

Limited English Proficiency —Percentage of households where no one older than 14 who lives there speaks English at home as a primary language, or speaks English "very well."

Natural Resources

The construction and implementation of the proposed Light Rail Alternatives would result in effects to natural resources (species or the species' habitat). Potential effects to natural resources were assessed. Where potential adverse effects were identified, efforts are made to avoid, minimize or mitigate these effects through design modifications. This information helps to identify protected species and habitats that may be governed by applicable federal and state regulations.

Natural resources include all plant and animal species and any area capable of providing habitat for plant animal species or capable of functioning to support ecological systems and maintain environmental balance.

Biotic - the interacting organisms living together in a specific habitat.

Terrestrial - pertaining to, consisting of, or relating to species living on the earth. Four terrestrial communities/habitats were identified in the study area: bottomland hardwood forest, alluvial hardwood forest, mesic mixed forest, and maintained/disturbed areas.

Bottomland Forest – deciduous, wetland forested areas dominated by mesic hardwood tree species that occur within the 100-year floodplain. Bottomland forests are commonly found wherever streams or rivers (at least occasionally) cause flooding beyond their channel confines. Bottomland hardwood forests are distinguished from the alluvial hardwood forests by the presence of larger streams and the landforms created from sediment deposits that occur within the larger floodplain areas.

Alluvial Hardwood Forest – Formed by the action of running water; of or related to river and stream deposits. Alluvial hardwood forests occur throughout the study area along small streams. This community has a significant component of wetland species, particularly in the herb layer. These areas are intermittently flooded, and may contain standing water for extended periods in the winter and spring.

Mesic Mixed Forest – characterized, or relating to, or requiring a moderate amount of moisture. This community, if undisturbed, would most resemble mature, stable forests in this region that are usually characterized by a hardwood canopy. However, this community is characterized by a mixture of pine and hardwood species, with pines occasionally comprising greater than 30 percent of the canopy. The community in the study area occurs primarily as a buffer around roads, residential and other developed areas, and as secondary growth forest on previously-timbered or otherwise disturbed land.

Maintained/Disturbed Areas – a general land use category contained in environmental documents that includes lawns, parking lots, cleared areas, and other properties which have been substantially altered or developed. It does not include terrestrial forests, wetlands, prime farmlands, and other specific natural resource uses.

Water resources

The construction and implementation of the proposed Light Rail Alternatives would result in effects to water resources. Potential effects to water resources were assessed. Where potential adverse effects were identified, efforts are made to avoid, minimize or mitigate these effects through design modifications. This information helps to identify the water resources that may be governed by applicable federal and state regulations/may require federal/state permits.

Water resources are the physical elements of the aquatic environment, such as streams, rivers, lakes, and shorelands, as well as life forms such as aquatic plants and fish that live within the aquatic environment. Water resources include the following features: groundwater, surface waters, wetlands, floodplains, floodways, and water quality.

Aquatic - pertaining to, consisting of, or relating to species living in the water. Aquatic communities/habitats within the project study area consist of many small intermittent and perennial streams, as well as a few larger perennial streams (e.g., New Hope Creek, Little Creek) and their associated wetlands.

USACE – US Army Corps of Engineers. The federal agency which has jurisdiction over and manages the extensive water resource management lands of the United States. Also, the federal agency that delineates “Waters of the United States.” and issues Section 404 and Section 401 permit.

Clean Water Act (CWA): Federal law that establishes basic structure for regulating discharges of pollutants in to the waters of the US. The act also continued requirements to set water quality standards for all contaminants in surface waters. It is codified at 33 U.S.C. §1251, et seq.

Jurisdictional "waters of the United States" – the term used in the Clean Water Act to refer to bodies of water that are under the jurisdiction of the Clean Water Act. It is defined at 40 CFR 122.2.

Section 404 – regulates the discharge of dredged or fill material in waters of the United States through USACE permitting program.

Section 401 – regulates water quality through the North Carolina Department of Natural Resources Division of Water Resources (NCDENR DWR) water quality certification program. The permit review and issuance process first encourages avoidance of impacts, followed by minimizing impacts and lastly through mitigating unavoidable impacts.

Stream Impacts –refer to direct impacts to "jurisdictional streams," which are streams delineated by the USACE and which are Waters of the United States.

Riparian – means pertaining to anything connected with or immediately adjacent to the banks of a stream; in other words, the land on the margins of streams, rivers and other bodies of water

Riparian Areas/Buffers – Riparian areas are lands adjacent to water bodies. The vegetation in the riparian areas filter nutrients and pollutants from runoff and are thus referred to as "buffers." Overall, riparian areas perform a variety of ecological functions that help to improve or maintain local water quality and maintain the health of both the stream and the adjoining land.

Riparian Habitat – a habitat type associated with riparian land. In non-desert areas, riparian habitats typically are characterized by dense vegetation consisting primarily of willow, alder, and cottonwood species which support a wide variety of waterfowl, songbirds, amphibians, and small mammals.

Riparian Zone 1 and 2 –NCDNR DWR has implemented special rules to protect the water quality of streams in the Neuse River Basin, which extends into Durham and Orange Counties and into the D-O Corridor. The rules protect a 50-foot riparian buffer around all surface waters in the Neuse River Basin, such as ponds and streams but excluding wetlands. Land in the riparian buffer may not be distributed by a project such as D-O LRT without permission from DWR, and any disturbances caused by the project must be mitigated elsewhere. The mitigation requirements for disturbances to land located in Riparian Zone 1 is higher than the mitigation requirements for disturbances to land located in Riparian Zone 2. Riparian Zone 1 includes land within the 30-foot buffer closest to the water's edge, while Zone 2 includes land within the remaining 20 feet of buffer.

Wetland – A wetland is defined by the USACE as those areas that are inundated or saturated by surface or ground water at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas that do not typically dry out.

Wetland impact – refers to the acreage of wetlands that are considered Waters of the United States that would be affected by a particular alternative.

Ponds — Ponds are small self-contained bodies of water

Pond impact — refers to the acreage of ponds that are considered Waters of the United States that would be affected by a particular alternative.

Floodplains – the riverside land that is periodically inundated by a river's floodwaters is called a floodplain. Floodplains serve important purposes. They temporarily store water during flooding events,

improve water quality, provide important habitat for river wildlife, and create opportunities for recreation.

100-year floodplain – the area along or adjacent to a stream or body of water that is capable of storing or conveying floodwaters during a 100-year flood event. In any given year, a 100-year flood event has the probability of occurring 1% of the time.

100-year floodplain Impacts – refers to the acres of land within the 100-year floodplain that would be affected by a particular alternative.

Historic Resources

The construction and implementation of the proposed Light Rail Alternatives would potentially result in effects to historic resources. For this reason, historic resources are identified for the **Area of Potential Effects** for the proposed alternatives. This information helps to identify the water resources that may be governed by applicable federal and state regulations/may require federal/state permits.

Area of Potential Effects - The study area that is used to study and assess potential effects to historic resources. The Area of Potential Effects is issued by the FTA after consultation with the State Historic Preservation Office (SHPO) and any applicable local historic entities.

Section 106 –of the National Historic Preservation Act (NHPA): Requires federal agencies to take into account the effects of their undertakings (projects) on historic properties, and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in 36 CFR 800 "Protection of Historic Properties," the regulations issued by the ACHP.

Travel Time

Travel time - The total time required to travel from one place to another.

Costs

Capital cost —The cost to plan and build a project. For a light-rail system, this includes the cost of engineering and design, the land on which the system is built (right-of-way), site preparation work, and all physical elements of the system including track, ballast, catenary (overhead wires), station platforms, any needed street reconstruction, utility relocations, wetland mitigation, park-and-ride lots, light rail vehicles, a Rail Operations and Maintenance Facility, pedestrian bridges. It also includes associated "soft" costs such as insurance and professional services (such as attorneys).

Operating cost —Generally referred to as "Operating and Maintenance Costs," this is the cost to operate a transit system, typically calculated on an annual basis. These figures include all costs to operate a transit system, including the labor of operators, maintenance personnel, and managers; general vehicle maintenance; electricity to power vehicles and other facilities; and administrative costs. Operating costs do not include vehicle depreciation or the cost of capital projects such as vehicle replacement.

Public Parklands

Section 4(f) of the USDOT Act of 1966 requires consideration of park and recreational lands, wildlife and waterfowl refuges, and historic sites in transportation project development. This Act protects the "use" of public parklands or historic resources for a transportation program or project. For this reason, the environmental analysis reviews public parklands within the proximity of the proposed alternatives.

Section 4(f) – A section of the USDOT Act of 1966 which stipulates that the USDOT agencies (e.g. FTA) will not approve any program or project which requires the "use" of any publically owned park, recreation area, or wildlife or waterfowl refuge, or any land form an historic site of national, state or local significance unless 1) there is no feasible and prudent alternative to the use, and 2) all possible planning to minimize harm resulting from such use is included. Section 4(f) is currently codified into law at 49 U.S.C. §303 and 23 U.S.C. §138.

Visual and aesthetic

The aesthetic quality of a community is comprised of visual resources, or the physical features that make up its visible landscape. National Environmental Policy Act (NEPA) identifies aesthetics as one of the factors in the human environment that must be considered in determining the effects of a project. Federal regulations require that visual impacts be addressed for Section 106 and Section 4(f) resource properties.

The proposed D-O LRT would introduce new visual elements as a result of implementation of the Light Rail Alternatives. The assessment of existing visual conditions, as well as the change any new visual elements would introduce, as a result of the proposed alternatives is completed to identify potential effects and mitigation measures.

Since the assessment of visual and aesthetic effects can be perceived differently by individuals, the USDOT FHWA's *Visual Impact Assessment for Highway Projects* (FHWA 1988); *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (Technical Advisory T 6640.8A, 1987); and, *Esthetics and Visual Quality Guidance Information* (August 1986) were followed to methodically review and assess visual effects.

Visual resources - are those physical features that make up the visible landscape (such as building and natural areas), including land, water, vegetative and man-made elements. These elements are the stimuli upon which actual visual experience is based. Visual resources are not, however, limited to the elements or features that are of outstanding visual quality. A location or element in a visual environment can have visual values attributed to it by its viewers regardless of its quality.

Viewshed - is the area that can be seen from the proposed Light Rail Alternatives and the area from where the Light Rail Alternatives can be seen. In other words, what people on the light rail vehicles can see, and where anyone else can see the vehicles and associated facilities

- This viewshed is divided into **landscape units** that have similar visual characteristics
- The visual attributes of the landscape units are described using three concepts: **visual resources**, **visual character**, and **visual quality**

- The impact on the viewer depends on the viewer's characteristics and the visual resources, character and quality of the landscape unit

Viewers: Neighbors and travelers with views of the project or from the project.

Exposure: The physical location of each viewer group, the number of viewers, and the duration of their view.

Sensitivity: The viewers' variable receptivity to the visible environment, affected by their awareness, activity, values, and goals and the view's cultural significance.

Scale for Viewer Exposure and Sensitivity

Exposure	Sensitivity
High: Many viewers, consistent exposure for long periods of time, close proximity, unobstructed line of sight	**High:** Viewers' activity draws them to the view. View is important to the values and goals of the viewers or has cultural significance
Moderate: Some viewers, regular exposure for a short period of time, moderate proximity to the view, some obstructions to the view	**Moderate**: Viewers' activity may cause some distraction from the view. View is of some importance but is not culturally significant
Low: Few viewers, short duration, far from the view, obstructed view	**Low:** Viewers' activity distracts them from the view. Views are not supported by the values and goals of the viewers and do not have cultural significance